APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,481	07/21/2003	Terrence Blevins	06005/39533	9135

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MARSHALL, GERSTEIN & BORUN LLP
233 S. WACKER DRIVE, SUITE 6300
SEARS TOWER
CHICAGO, IL 60606

EXAMINER
BARNES, CRYSTAL J

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/625,481	BLEVINS ET AL.
	Examiner	Art Unit	
	Crystal J. Barnes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 July 2003</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,11,14-16,20-24,31-38,40 and 45* is/are rejected.

7)☒ Claim(s) *2-10,12,13,17-19,25-30,39 and 41-44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date <u>27 May 2004</u>.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   The following is an initial Office Action upon examination of the above-

identified application on the merits. Claims 1-45 are pending in this application.

Priority

2.   Applicant has complied with the conditions for receiving the benefit of an

earlier filing date under 35 U.S.C. 120.

Information Disclosure Statement

3.   The examiner has considered the information disclosure statements (IDS)

submitted on 27 May 2004.

Drawings

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: reference number 120 in figure 4.

5.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they do not include the following reference sign(s) mentioned in the

description: reference numbers 184 and 186 do not appear in figure 7B.

6.   Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment

to the specification to add the reference character(s) in the description in

compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid

abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. Each drawing sheet submitted after the

filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes

are not accepted by the examiner, the applicant will be notified and informed of

any required corrective action in the next Office action. The objection to the

drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office

action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8.   Claims 1, 11, 15, 16, 20 and 31-38 are rejected under 35 U.S.C. 102(e) as

being anticipated by US Pub. No. 2004/0078182 A1 to Nixon et al.

The applied reference has common inventors with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes

prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be

overcome either by a showing under 37 CFR 1.132 that any invention disclosed but

not claimed in the reference was derived from the inventor of this application and

is thus not the invention "by another," or by an appropriate showing under 37 CFR

1.131.

As per claim 1, the Nixon et al. reference discloses a process control system element for use in a process plant having a user interface and one or more process controllers, the process control system element comprising: a control module (see page 3 [0026], "control modules") adapted to execute on the one or more process controllers ("controllers 12a, 14a, 16a") to implement process control activities ("process control loops") within the process plant ("process control system 10"); a graphic display module (see page 4 [0031], "information section 74") adapted to produce a graphical depiction ("graphical or textual description") of at least a portion ("node indication section") of the process plant ("process control system 10") on the user interface (see page 4 [0030], "control or simulation display screen 70"); and a process simulation module (see page 4 [0028], "simulation system or application 50") adapted to simulate the operation of one or more physical devices ("nodes") within the process plant ("process control system 10") being controlled by the control module ("control modules") and depicted in the graphical depiction ("graphical or textual description") associated with the graphic display module ("control or simulation display screen 70"), wherein the process simulation module ("simulation system or application 50") is communicatively connected (see page 4 [0029], "routine 57") to the control module ("control modules") to communicate

data between the process simulation module ("simulation system or application 50")

and the control module ("control modules") during operation of the control module

("control modules").

As per claim 11, the Nixon et al. reference discloses the process simulation

module ("simulation system or application 50") includes a simulation algorithm

("routine 57") adapted to simulate process dynamics (see page 3 [0026], "input

function, control function, output function") within the process plant ("process

control system 10").

As per claim 15, the Nixon et al. reference discloses the process simulation

module ("simulation system or application 50") includes a first portion (see page 3

[0028], "distribute") stored in and adapted to be executed in a first computing

device (see page 4 [0028], "workstation 20a") within the process plant ("process

control system 10") and a second portion stored in ("distribute") and adapted to be

executed in a second computing device (see page 3 [0026], "workstation 18a")

within the process plant ("process control system 10").

As per claim 16, the Nixon et al. reference discloses the first portion

("workstation 20a") of the process simulation module ("simulation system or

application 50") is communicatively connected (see page 3 [0025], "data highway

30") to the second portion ("workstation 18a") of the process simulation module

("simulation system or application 50") through an external reference (see page 3

[0026], "configuration database 32").

As per claim 20, the Nixon et al. reference discloses the control module

("control module") is adapted to receive a simulated measurement (see page 4

[0029], "simulation instances") from the process simulation module ("simulation

system or application 50") and an actual measurement (see page 3 [0025], "data")

from a device (see page 3 [0024], "input/output and field devices 22, 23, 24")

within the process plant ("process control system 10").

As per claim 31, the Nixon et al. reference discloses the process simulation

module ("simulation system or application 50") includes a plurality of

interconnected simulation elements (see page 4 [0028], "simulation instance"),

wherein two or more of the simulation elements ("simulation instance") simulate the

operation of different devices ("control modules") within the process plant

("process control system 10").

As per claim 32, the Nixon et al. reference discloses the process simulation

module ("simulation system or application 50") further includes a stream element

(see page 3 [0026], "function blocks") that represents a material ("input, control,

output functions") within the process plant ("process control system 10"), wherein

the stream element ("function blocks") is connected to one or more of the

simulation elements ("simulation instance") within the process simulation module

("simulation system or application 50").

As per claim 33, the Nixon et al. reference discloses each of the simulation

elements ("simulation instance") includes a simulation algorithm (see page 4 [0028],

"simulation modules") that models the operation of an associated device ("control

modules") within the process plant ("process control system 10").

As per claim 34, the Nixon et al. reference discloses the simulation

algorithm ("simulation modules") for one of the simulation elements ("simulation

instance") is selectable as one of a number of predefined algorithms ("each

simulation modules").

As per claim 35, the Nixon et al. reference discloses further including a

library (see page 3 [0025], "database 32") of predefined simulation algorithms

("simulation modules") for use in the one of the simulation elements ("simulation

instance").

As per claim 36, the Nixon et al. reference discloses the simulation algorithm ("simulation modules") for one of the simulation elements ("simulation instance") is user definable (see page 4 [0029], "creating").

As per claim 37, the Nixon et al. reference discloses further including a graphic editor (see page 4 [0029], "display routine 56") adapted to assist a user in defining the simulation algorithm ("simulation modules") for the one of the simulation elements ("simulation instance").

As per claim 38, the Nixon et al. reference discloses further including a high fidelity simulation (see page 4 [0029], "routine 57") having portions thereof communicatively connected to the simulation elements ("simulation instance") of the process simulation module ("simulation system or application 50") to provide high fidelity simulation parameters ("reference parameter modules") to the simulation elements ("simulation instance").

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. No. 2004/0078182 A1 to Nixon et al. in view of USPN 6,161,051 to Hafemann et al.

As per claim 14, the Nixon et al. reference discloses the graphic display module ("control or simulation display screen 70") is communicatively coupled (see page 4 [0029], "routine 57") to the process simulation module ("simulation system or application 50") to receive one or more simulated parameters ("inputs or outputs") from the process simulation module ("simulation system or application 50") and wherein the graphic display module ("control or simulation display screen 70") is adapted to produce an animation within the graphical depiction ("graphical or textual description") based on the one or more simulated parameters (see page 3 [0026], "input, control output functions").

The Nixon et al. reference does not expressly disclose an animation within the graphical depiction.

The Hafemann et al. reference discloses

(see column 14 lines 51-65, "The enterprise wide control system ... animate

simulation and subsequent production displays with a graphical depiction at various

levels of hierarchical detail ...")

At the time the invention was made, it would have been obvious to a person

of ordinary skill in the art to modify the simulation system/application taught by

the Nixon et al. reference with the code taught by the Hafemann et al. reference

to animate simulation.

One of ordinary skill in the art would have been motivated to modify the

simulation system/application with the code to animate simulation so that the

electrical, pneumatic, hydraulic, logic, diagnostics, external behavior, controlled

resources and safety elements of a control system could be defined and

illustrated.

11.   Claims 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US Pub. No. 2004/0078182 A1 to Nixon et al. in view of USPN

RE 30,280 to Berman et al.

As per claim 21, the Nixon et al. reference does not expressly disclose the

control module is further adapted to use the simulated measurement from the

process simulation module to perform the control activities within the process

plant.

The Berman et al. reference discloses

(see column 8 lines 12-29, "... process the incoming and control signals and to

automatically send back the appropriate plant condition signals for simulating ...

computer model of the plant ... defined in terms of the input and output signals

seen by the control system equipment 24 ... all sensor outputs are modeled and

action are taken for all control or actuating signals from the control system

equipment 24.")

At the time the invention was made, it would have been obvious to a person

of ordinary skill in the art to modify the process control system taught by the

Nixon et al. reference to include both the simulated data and actual data taught by

the Berman et al. reference.

One of ordinary skill in the art would have been motivated to modify the

process control system to include both the simulated data and actual data for

maximum efficiency and flexibility.

As per claim 23, the rejection of claim 21 is incorporated and further claim

23 contains limitations recited in claim 21; therefore claim 23 is rejected under

the same rationale as claim 21.

As per claim 24, the rejection of claim 21 is incorporated and further claim

24 contains limitations recited in claim 21; therefore claim 24 is rejected under

the same rationale as claim 21.

12.   Claims 40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable

over US Pub. No. 2004/0078182 A1 to Nixon et al. in view of USPN 5,826,060 to

Santoline et al.

As per claim 40, the Nixon et al. reference does not expressly disclose the

process simulation module is adapted to produce a simulated parameter indicative

of an operation of the process plant and to generate an alarm for display to a user

based on the value of the simulated parameter.

The Santoline et al. reference discloses

(see column 7 lines 48-53, "the stimulated system incorporates the actual

plant to man-machine interface (windows, process diagram displays, alarm lists,

system diagnostics and so forth) …")

At the time the invention was made, it would have been obvious to a person

of ordinary skill in the art to modify the simulation system/application taught by

the Nixon et al. reference with the interface taught by the Santoline et al.

reference to present in the simulator any problems inherent in the actual system.

One of ordinary skill in the art would have been motivated to modify the

simulation system/application with the interface to present in the simulator any

problems inherent in the actual system, thereby leading to earlier

detection/diagnosis.

As per claim 45, the rejection of claim 40 is incorporated and further claim

45 contains limitations recited in claim 40; therefore claim 45 is rejected under

the same rationale as claim 40.

Allowable Subject Matter

13.   Claims 2-10, 12, 13, 17-19, 25-30, 39 and 41-44 are objected to as being

dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any

intervening claims.

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

The following references are cited to further show the state of the art with

respect to simulating process control in general:

USPN 5,347,446 to Iino et al.

US Pub. No. 2005/0096872 A1 to Blevins et al.

JPPN 1-298389 A to MOCHIJI

JPPN 1-120593 A to SONODA

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Crystal J. Barnes whose telephone number is

571.272.3679. The examiner can normally be reached on Monday-Friday alternate

Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Anthony Knight can be reached on 571.272.3687. The fax

phone number for the organization where this application or proceeding is assigned

is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system,

contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJB
9 May 2005